D/DCI/RM

The Director of Central Intelligence

Washington, D.C. 20505
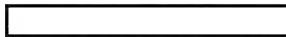
Intelligence Community Staff

DCI/IC 78-3895

JUL 11 1978

MEMORANDUM FOR: Lieutenant General Harold R. Aaron, USA
Acting Director, Defense Intelligence Agency

Mr. Frank C. Carlucci
Deputy Director of Central Intelligence

25X1   FROM:
Deputy to the DCI for Resource Management

SUBJECT: Review of Resource Management Staff Issue Paper on
CIA-DIA SAFE

REFERENCE: Memorandum for DDCI from D/DCI/RM dated 10 July 1978
DCI/IC 78-1175 (Copy Attached)

Attached is the issue paper on CIA-DIA SAFE which will be the

basis for our discussion on Friday, 14 July 1978, per reference

above.

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Attachment:
As Stated

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DIA-CIA SAFE

ISSUE: What level of funding should be included in the FY 1980-1984 NFIP to support joint design and development of Project SAFE?

BACKGROUND: More than 20 months have passed since Congress stipulated that CIA SAFE (Support to the Analyst File Environment) and DIA ADISS (Advanced Defense Intelligence Support System) be merged into a common ADP system. Six months of formal, consolidated SAFE design and development activity has transpired. Whether the common CIA-DIA ADP system can be designed, developed and implemented at reasonable cost and in a timely fashion remains a major uncertainty. This section summarizes the history of this project in order to provide a basis for choosing among the resource alternatives proposed below.

Separate ADISS-SAFE Projects:

The FY 1977 NFIP requested Congressional approval of two independent ADP systems to support analysts at CIA and DIA. CIA requested [   ] for   **25X1**
Project SAFE as a full-scale follow-on to its "interim" SAFE project. Interim SAFE provided certain information handling capabilities to approximately 160 CIA analysts in order to evaluate the utility of the overall SAFE concept. DIA requested [   ] for ADISS to replace the DIA   **25X1**
On-Line System (DIAOLS) which had been in full operation since 1968. The DIAOLS technology was asserted to be incapable of supporting DoD analyst demand, not only in DIA itself, but also in the telecommunications interface (IDHSC) which links DIAOLS to the worldwide DoD Intelligence Information System (DODIIS). The Joint House/Senate Conference Committee Report, published in October 1976, directed the agencies merge their independent efforts and work toward a "common" system. Congress perceived the analytical needs of CIA and DIA analysts to be essentially identical; therefore, a jointly designed and developed ADP system to satisfy the needs of analysts in both agencies was considered to be beneficial. An interagency effort would likely lead to hardware and software procurement economies not realizable if SAFE and ADISS remained separately funded and independent ADP projects. The Conference Committee
constrained total CIA SAFE funding at [   ] Of this amount, approxi-   **25X1**
25X1 mately [   ] was appropriated in FY 1977 to continue SAFE system design
and analytical studies. Approximately [   ] was appropriated to DIA for   **25X1**
the continuation of ADISS definition studies. Concurrently, the Chairman of the DCI's Information Handling Committee formed a SAFE-ADISS Working Group consisting of CIA, DIA, NSA and ICS representatives to determine if the merger of SAFE and ADISS was feasible.

The initial CIA and DIA reaction was to defend ADISS and SAFE as separate projects based upon substantive differences between CIA and DIA missions. Mission differences were stated to affect data handling needs. Table 1 was developed from CIA/DIA inputs to illustrate the nature of that argument.

Table 1

SAFE/ADISS System Comparison

Function/Capability	SAFE System	ADISS System
1. User Constituency	• Internal CIA (Washington Metropolitan area)	• Worldwide support of both DoD and non-DoD Decision Makers
2. Interface with other Information Handling Systems	• None currently planned • System potential for future external interfaces	• Access to over 50 large-scale file systems at NSA, CIA, DIA, NPIC, SAC, PACOM, and NORAD (COINS, NMIC, AIRES and CCF Interfaces)
3. Principal Intelligence Outputs Supported	• National level analysis • Foreign economic, political, scientific, technical, military, sociological and geographic intelligence	• National and DoD-Level Analysis • Field Analysis • Time-Critical Analysis • Order of Battle, Target Data, Installation Intelligence
4. Content of Data Bases Assessed	• CIA centralized automated data bases • Analyst working files and data bases • Incoming electrical messages and mail	• DIA and field automated data bases and files • Highly structured information • Some raw, unevaluated intelligence (messages and hard copy)

SAFE/ADISS System Comparison
(Continued)

Function/Capability	SAFE System	ADISS System
5. User Functions	• Access data from CIA central files • Receive mail • Build analyst working files • Make analytical maniuplations of unstructured data • Send info to other analysts	• Input to, upgrade and maintain official data bases worldwide • Transfer data in bulk worldwide • Access data from official files worldwide • Make analytical maniuplations of of formatted data • Build analyst working files
6. Terminal Availability for Analyst Use	• Individual analysts have terminal access at desks (projected 1200 concurrent users)	• Some individual analyst desk-side support augmented by terminal support centers (projected 150 concurrent users)
7. System Communications	• High-speed, localized communication system	• Conventional lower-speed, long-haul (worldwide) communications networks
8. Security	• All users have all-source clearances • Multi-level system security controls needs are minimal	• Variety of levels of clearances of users required

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In early 1977, the DCI discussed the commonality question with the Secretary of Defense. The DCI's conception was that two duplicative efforts could not be afforded and that the agencies efforts to defend their projects as different based on mission and data handling differences were not convincing. In a memorandum to the D/DCI/IC dated 8 April 1977, the DCI stated:

> "The real issue is whether there are any generically different tasks to be done by one or the other and, if so, whether these tasks are either necessary or could be satellited onto a single computer system as an excursion, or could be divorced from the mainstream and done on a small scale project. The advantages of a single computer data base for the entire Intelligence Community are overwhelming. The specifications for two systems would have to be very persuasive to warrant what would appear to the public to be gross duplication."

SAFE-ADISS commonality eventually became the subject of a 60-day Booz-Allen study funded by CIA. Booz-Allen's report was the only effort made outside the Intelligence Community to analyze SAFE-ADISS commonality and the feasibility of a merger.

The final Booz-Allen report was published in September 1977. The excerpts included below are taken from the report and do not constitute RMS endorsement. The intent is simply to introduce the findings of a contractor qualified to comment on the SAFE-ADISS question.

Booz-Allen supported the SAFE-ADISS provision in the October 1976 Joint House/Senate Conference Committee Report and the DCI's April 1977 preliminary impressions regarding system commonality. The contractor made the following general conclusions:

- Separate system design and development was needlessly costly both fiscally and in terms of expected system performance. Separate system cost was estimated at [ ]

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- SAFE and ADISS should be designed and developed under a joint program that made use of common hardware and operating system architecture, exclusive of communications equipment. Joint system costs were estimated at [ ]

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- A joint resource management office should be formed under the direction of a senior-level joint committee to which a joint office director would report.

- A single monolithic system serving both CIA and DIA users was considered operationally infeasible. High processing and input/output loads would push the technology of the data processing industry.

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Evidence supporting the agencies contention that new ADP systems were needed to replace interim SAFE and DIAOLS is also contained in the Booz-Allen Report. The contractor observed:

- Interim SAFE had operationally validated the expected benefit of the large scale investment in CIA SAFE. However, interim SAFE was almost continuously saturated by a modest number of users particularly in the text editing function where only five analysts could be concurrently supported.

- Interim SAFE was a pilot system and its present capabilities should not be expanded.

- DIAOLS was a "patchwork" system that had undergone continued enhancement since its introduction. Like interim SAFE, DIAOLS is saturated by a modest number (20-30) of concurrent DIA-DODIIS users. (DIAOLS saturation was also confirmed by a Federal Simulation Center study completed at approximately the same time for DIA in support of the DIAOLS Improved Service Plan).

- DIAOLS should not continue to be modified to meet expanding DODIIS demands.

Booz-Allen noted the following with respect to SAFE-ADISS differences:

- The predominant CIA SAFE concept was "analyst support;" e.g. incoming filing and message distribution, analyst processing of messages; building of analyst files, document indexing, and message creation and routing.

- The predominant ADISS concept was "data storage and retrieval" in support of basic DODIIS functions. Analyst support was a secondary ADISS capability. The data storage and retrieval function was an enlargement to DIAOLS; the analyst support capability of CIA SAFE would be a new DIA capability.

- SAFE analyst support and ADISS data storage and retrieval were significantly dissimilar functions.

Booz-Allen highlighted the following items as potential management difficulties:

- In the overall context of the DoD's ADP system development process (MIL-STD-490), ADISS lagged SAFE by 18 to 24 months. CIA SAFE requirements were fully documented although some were unnecessarily severe. This disparity would become a programmatic difficulty.

- CIA SAFE was dependent upon another on-going Agency ADP project called ADSTAR (Automated Document Storage and Retrieval). ADSTAR would convert hardcopy, paper documents into electronic form for storage. About 80% of the CIA SAFE-ADSTAR capability could be transferred to DIA's ADISS.

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- Since ADISS would be a large component of DODIIS, the development of functional requirements and system specifications would prove difficult for DIA. DIA had not adequately defined ADISS interfaces to AIRES (Advanced Imagery Requirements Exploitation System) and the NMIC (National Military Intelligence Center) support system.

- If ADISS was not to become a further proliferation of independent, non-compatible defense intelligence systems, then ADISS must be designed and developed as an integrated component of the DODIIS.

Booz-Allen recommended CIA build the "analyst support" capability for both agencies and DIA build a "storage and retrieval" capability for both agencies. Although the authors saw little commonality between these two functions, the benefit of joint design and development was envisioned to lie in the technical interchanges between CIA and DIA and the system "performance" advantages this would provide. The suggestion was made that CIA proceed with Project SAFE using it as a lead program, letting ADISS utilize key common elements to reduce substantive lag. Slowing down CIA SAFE to allow ADISS to "catch up" was not recommended because schedule slippages could be anticipated, and the tendancy for each Agency to actually develop its own architectural design would be reinforced.

In late 1977, the Director of DIA proposed to the DCI that a Consolidated SAFE Project Office (CSPO) be formed. DIA also dropped the acronym "ADISS" in favor of the overall project name of "SAFE." CIA's Executive Agency Group (EAG) slowed the development of SAFE in FY 1978 by reducing that year's CIA request for SAFE from [   ]   25X1

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Approximately [   ] is being requested for the SAFE project in the FY 1979 NFIP budget request. [   ] in funding allows CIA to further refine its requirements. The remaining [   ] will give DIA contractors time to define DIA SAFE requirements and undertake necessary R&D in support of DIAOLS file conversion.
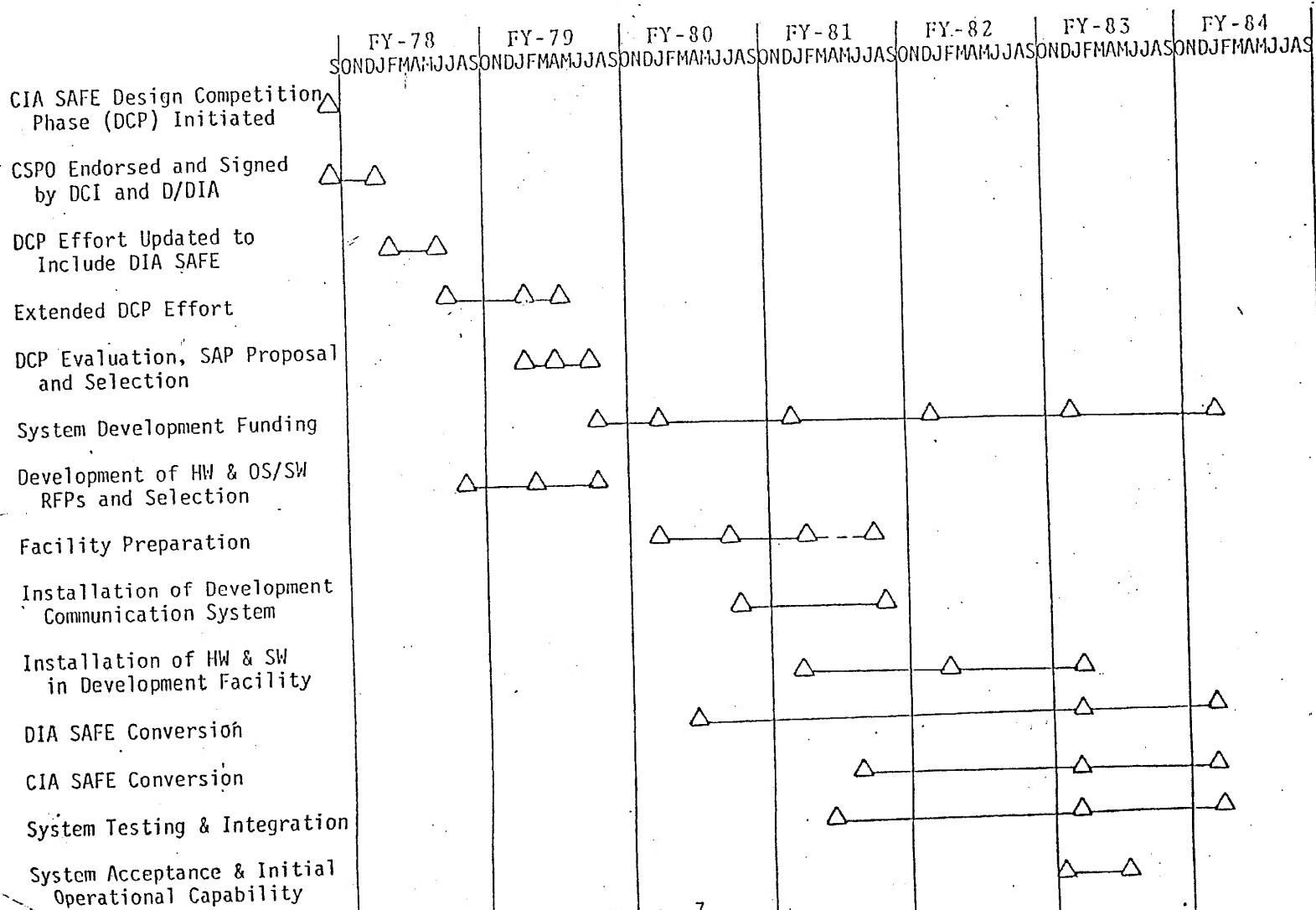
SAFE as a Conslidated CIA-DIA Project:

In January 1978, a Consolidated SAFE Project Office (CSPO) was established. A joint management plan was drafted and approved by the DCI and the Director of DIA. Project milestones, as of April 1978, are shown in Figure 1. These milestones call for a SAFE IOC of FY 1983, with a "design competition phase" taking place during FY 1978 and through the better part of FY 1979. Selection of a prime contractor (General Electric or TRW) is scheduled in late FY 1979. System acquisition purchases (initial developmental hardware) are scheduled to begin in the fourth quarter of FY 1980. The total cost estimate for SAFE from FY 1977 through FY 1984 are shown in Table 2.

The selection of a prime contractor in 1979 and the acquisition of hardware to begin in FY 1980 are near-term decisions of critical importance to the timely and cost-effective achievement of the joint system

FIGURE 1

CONSOLIDATED SAFE PROJECT MAJOR MILESTONES

	FY-78	FY-79	FY-80	FY-81	FY-82	FY-83	FY-84
	SONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS	ONDJFMAMJJAS

CIA SAFE Design Competition Phase (DCP) Initiated

CSPO Endorsed and Signed by DCI and D/DIA

DCP Effort Updated to Include DIA SAFE

Extended DCP Effort

DCP Evaluation, SAP Proposal and Selection

System Development Funding

Development of HW & OS/SW RFPs and Selection

Facility Preparation

Installation of Development Communication System

Installation of HW & SW in Development Facility

DIA SAFE Conversion

CIA SAFE Conversion

System Testing & Integration

System Acceptance & Initial Operational Capability

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IOC. A decision to support these planned milestones during program
review should be weighed against the following criteria:

● Whether the direction the SAFE project appears to be taking since
merger in January 1978 is actually promoting the goal of commonality;
and,

● A consideration of the impact of SAFE upon NFIP resources given the
project's $104M FY 1980-1984 proposed funding profile.

With respect to the first of these criteria, OCIS believes less is known
today about what the "common system" is, than was known almost a year
ago when Booz-Allen completed its study of SAFE and ADISS. The CSPO's
only estimate of system commonality is the vague generalization: "25
percent plus or minus ten percent." No definitive evidence beyond Booz-
Allen's report exists in answer to the question of whether SAFE continues
to be worth doing as a combined project. Specifically:

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● DIA SAFE interfaces to other systems which make up the DODIIS are
ambiguous. Also, DIA SAFE relationship to NMIC and AIRES has, for
the most part, only been vaguely explained. No definitive evidence
exists to support DIA's assertion that they can proceed with SAFE
without a validated DODIIS architecture. Work on a DODIIS archi-
tectural plan is proceeding, but only a preliminary concept has
been established and a draft document is not expected until the
last quarter of FY 1978.

- A rigorous statement of DIA SAFE requirements does not exist. Requirements originally promised in February 1978 have now backed up to July 1978, during which time DIA must meet three milestones. Otherwise, the overall SAFE schedule will be affected. It should be noted that DIA will provide "Interim Requirements Document" only in July.

- Because of the additional project cost [   ] associated with incorporating DIA requirements into the design competition phase of development, the General Electric and TRW contracts were modified by the CSPO to deliver a SAFE architecture without detailed sub-system and system design. CSPO has stated this change was made for cost considerations and in an attempt to preserve the FY 1983 IOC.   **25X1**

- Under the modified design competition, the SAFE architecture will not be available until January 1979. A prime contractor will not be selected until March 1979. If a decision is made to fund total initial procurement [   ] in the FY 1980 NFIP, justification of the SAFE program may be difficult before Congress.   **25X1**

The expected cost of SAFE has placed an impact on respective Program Managers in the following way: **25X1**

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ANALYSIS:

The inguidance SAFE funding request (Alternative 1) continues the joint
effort but in a design mode during FY 1980 by deferring initial SAFE
procurement to FY 1981. The IOC of SAFE will be delayed to at least FY
1984. The impact of deferral must be weighed in terms of how a one-year
slip impacts DIA and NFAC analysts. DIA analysts are supported by the
DIAOLS Improved Service Plan. The latter is scheduled for mid-1979
completion and will add enough new storage and retrieval capability to
DIAOLS to sustain DODIIS analysts over the next several years. The
impact upon NFAC is not definitively known. A survey conducted in 1976,
however, suggests the following:

• 60 percent of analysts will remain burdened by the manual message
  dissemination process either because it gives them too much data,
  data that is not relevant to their needs, or too slow a dissemi-
  nation rate.

• 30 percent of the analysts will continue to be unable to file and
  retrieve information accurately and completely.

• 30 percent of the analysts will be unable to effectively coordinate
  their workloads with counterparts or to satisfactorily edit written
  material.

It should be noted that CIA SAFE was delayed several years prior to the
prescribed merger with DIA. If this alternative is chosen, the impact
of a delayed CIA SAFE IOC from FY 1983 to FY 1984 might be reduced if
the Agency were to consider the feasibility of enhancing interim SAFE in
the same short-term manner that DIA has undertaken an enhancement to
DIAOLS. This upgrade might involve the addition of a high-speed system
for free text search and improvements to the current Cable Dissemination
System. In addition, the IBM 370-158 supporting interim SAFE might be
upgraded to a 370-168. It is unknown if CIA has formally evaluated an
upgrade to interim SAFE.

The Program Manager's Recommended Program for Project SAFE (Alternative
2), supports all scheduled milestones in the approved joint project
plan. Commitments made to Congress by the DCI, DIA and CIA witnesses in
FY 1978 and FY 1979 budget testimony are supported. Commitments made in
May 1978 by CIA and DIA before the HPSCI Subcommittee on Evaluation are
fully supported. However, the alternative should be weighed with respect
to how well its cost profile supports commonality; in particular, how
much access across agency lines will likely be provided by the SAFE
system reflected by this alternative's funding profile? Based upon
documentation supplied by the CSPO:

- The February 1978 CIA SAFE requirement documents explicitly pre-
  cludes electrical interface to non-CIA computer systems. The
  document does indicate that interfaces which supply data to CIA
  SAFE could be used.

- DIA's electrical interface with CIA SAFE is unknown, except in the
  general sense that an interface will exist along with others, such
  as COINS and various DODIIS subscribers via AUTODIN II.

- The GDIP PMRP refers to SAFE as the "cornerstone" of DODIIS. DIA
  has requested FY 1980 funds and manpower for a centralized "systems
  engineering" effort aimed at optimizing DODIIS network interfaces
  using standard software. DODIIS was recently characterized as
  including 28 organizations. The DODIIS computer inventory ranges
  from mini-computers to large scale IBM and Honeywell systems, and
  exceeds 100 machines of varying sizes, ages and manufacturers. The
  role of DIA SAFE as the "cornerstone" of this larger DoD system
  questions DIA's ultimate priorities, e.g., is DIA's priority
  commonality between DIA and CIA analysts or the use of SAFE to
  centrally support and control DODIIS?

- The impact of DCID 1/16 must be considered. The DCID allows the
  manager of a computer system to remove his computer from an inter-
  agency network if the manager is unsatisfied with the security of
  the data in the overall data network. The SAFE Steering Committee
  has not resolved security questions fundamental to the design of
  the common system raised by the CSPO Director in April 1978.
  Security policy internal to CIA may affect SAFE; specifically, it
  is unclear if DDO reporting will be available in the SAFE system.

This alternative should also be weighed with respect to "hidden costs"
associated with the question of whether special or unique processing
requirements exist in CIA and DIA that are necessary, but are not being
considered as part of the joint design and development effort. Based on
a review of the system requirements that are presently available to
OCIS, no unique function requirements could be identified. OCIS recognizes
DIA's total statement of requirements is incomplete; therefore, a detailed
evaluation of its interagency system characteristics for uniqueness
cannot be definitively accomplished. However, Booz-Allen identified
significant functional differences between ADIIS and SAFE. These
differences have not been challenged as invalid. A contingency may,
therefore, exist; namely, if DIA SAFE "images" CIA SAFE in terms of
adding an analyst support function only, a new DIA system will likely
emerge beyond FY 1984 to provide information storage and retrieval
capabilities needed to support DIA's role in DODIIS. Alternative 2A,
which would stretch out purchases and payments, affects the fiscal
pattern only. The FY 1980 procurement impact is somewhat less; however,
the cost of the system through FY 1979 increases by about [   ]

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Alternative 3 represents a different strategy for achieving the benefits
of Project SAFE. Each of the above alternatives stressed commonality as
an "a priori" technical management requirement. That approach apparently

requires the majority of CIA and DIA requirements to be known before a locus of commonality can be identified. Although systematic, this sort of emphasis might be responsible for adding unnecessary cost, risk and delay to the overall joint effort. In contrast, this alternative presumes commonality can systematically emerge in an "a posteriori" fashion; namely, as the outcome of consolidated management activity given: (1) Project SAFE is shifted to a design-to-cost basis; (2) the distinct data processing functions originally proposed by CIA and DIA in 1976 still represent the information handling capabilities predominantly needed to improve production; and (3) tight management control over the design and development of these functions, as SAFE subsystems, can be exercised by the CSPO and the SAFE Steering Committee. Prioritizing subsystem develop-ment according to need and scheduling subsystem procurement and IOC's according to the ability of the CSPO to rigorously articulate data processing requirements is made explicit under this alternative. Under these conditions, Project SAFE would move forward in FY 1980. A SAFE IOC would not be achieved until FY 1984, but subsystem IOC would be planned for FY 1982 (NFAC) and FY 1983 (DODIIS) respectively. Specifically:

- Requirements for "CIA SAFE" are defined and the subsystem so represented has remained a solution to NFAC's existing data pro-cessing shortfall. Therefore, this alternative would allocate [   ]   **25X1** to achieve the original "CIA-SAFE" capability.

- The alternative recognizes the DIAOLS Improved Service Plan will not alleviate production problems at DIA or for the DODIIS subscriber dependent upon DIAOLS. Writing the specifications for what the DIAOLS replacement ought to be as a Program SAFE subsystem would become a CSPO planning problem over the next few years. Therefore, no procurement for SAFE's DODIIS storage and retrieval subsystem would be included in the NFIP until FY 1981, when it is assumed a system specification would be known and validated. This alternative **25X1** provides [   ] for a storage and retrieval capability assuming the specifications will not be significantly dissimilar from the original DIA ADISS concept.

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- An additional [   ] would be separately allocated to ensure that as SAFE baseline subsystem capabilities develop, the opportunities for commonality inherent in each subsystem design option would be identified and exploited by the CSPO and the Steering Committee. Even though two dissimilar processing subsystems are proposed as the initialization of SAFE, their phasing is such that commonality should emerge through the use of common vendors and applications of common data processing technology. The existing Memorandum of Agreement between the DCI and the Director of DIA would need to be modified to control commonality funds. In addition, use of these funds would be continuously audited by OCIS to provide guidance in development of the common SAFE system.

- The CSPO would not commit any of the [blank] for contract or for procurement of common hardware and/or software items unless a specific written commonality proposal existed and was concurred with by CIA, DIA and the SAFE Steering Committee.

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- The Steering Committee would be the approval/disapproval authority for those proposals before they are forwarded to the DCI for final concurrence. OCIS would serve in an advisory capacity to the DCI and the SAFE Steering Committee.

SAFE itself is envisioned as the combination of the two system capabilities into an overall processing system where the storage and retrieval capability for DODIIS analysts would be available to the NFAC analyst, and the analyst support capability of the NFAC subsystem would be available to the DODIIS analyst.

The major disadvantage of this alternative is more organizational than technical. The planning and managerial control needed to support the outcomes envisioned above may prove overbearing to the CSPO. Should this occur, the incentives offered by this alternative would not be exploited to the mutual benefit of the parties concerned.

SAFE would be cancelled under Alternative 4. This has the impact of stopping the project before a large amount of NFIP resources is invested. Under this alternative, DIA would be forced into continued modification and patching of DIAOLS; CIA would likely undertake an upgrade to interim SAFE or make other adjustments to its central processing capability to better support NFAC.

DCI/IC 78-1175
10 July 1978

MEMORANDUM FOR: Mr. Frank C. Carlucci
Deputy Director of Central Intelligence

25X1   FROM:

Deputy to the DCI for Resource Management

SUBJECT: Review of Resource Management Staff Issue Paper
on SAFE

1. As a part of our summer Program Review, my staff has developed two kinds of issue papers: some structured by specific programs (e.g., CCP, GDIP, etc.), and some by the functional areas defined by the consolidated decision units. The program-oriented issue papers will be sent to the individual Program Manager for review. For the cross program issue papers, I believe that it is desirable to have a broader review.

2. In order to adequately discuss the issues involved in the SAFE Program, I propose that that we meet on 14 July from 1000 to 1200 to review our draft issue paper on SAFE. We will make a brief summary presentation of the paper and will then open the meeting for discussion. A draft of the paper will be sent to you later today.

3. The issue paper is intended to illuminate the issues for the DCI. To that end, I believe that the review should focus on the development of the issues, the feasibility of the alternatives, the validity of the cost estimates and the statements of the consequences involved in the various alternatives, and the satisfaction of needs. We expect this will require the following matters to be addressed:

o   The requirements for SAFE on the part of both DIA and CIA and the extent to which requirements which are common have been identified.

o   The extent to which the cost implications of known requirements have been identified so as to permit trade-offs between requirements and cost.

o   The total financial impact of equipment procurement on a term purchase arrangement.

SUBJECT: Review of Resource Management Staff Issue Paper
           on SAFE

o   The effects on the GDIP and the CIAP of funding the Program
    Managers' recommended SAFE Program (less the deferred purchase
    cost of equipment procurement) within the DCI guidance level.

o   What will be the consequences of a one or two year delay
    in implementation of SAFE for DIA and CIA individually and
    jointly.

Written comments can be forwarded later.

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     4. Please let [   ] know who will be
attending the meeting. We anticipate that it would be desirable for
the prospective users of the system to be represented, as well as the
Project Manager's Office.

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